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Laid Open Patent Journal, Sho 61-194009, August 28, 1986

54: Title of invention - Make-up cosmetics

21: Patent application - Sho 60-33381

22: Date of application - February 21, 1985

72: Inventors - Asao Harashima

1-6 Ariakidainishi Ichihara-shi

71: Applicant - Tore Silicone K.K.

2-8 Nipponbashi Muromachi Chuo-ku Tokyo-to

#### Specification

1. Title of invention  
Make-up cosmetics

#### 2. Claims:

A make-up cosmetic containing organopolysiloxane hardened powder.

#### 3. Detailed explanation of the invention.

( Industrial application )

The present invention refers to a make-up cosmetic. In other words, the present invention relates to a make-up cosmetic containing organopolysiloxane powder.

( The conventional technology )

The powder materials used in the conventional make-up cosmetics are mainly inorganic pigments powders such as talc, kaoline, bentonite, anhydrous silicic acid, silicon carbide, alumina, titanium oxide, carbon black, graphite, yellow iron oxide, red oxide, mica, titanium mica, zirconium oxide, sericite, calamine, ultramarine, etc.

On the other hand, Laid Open Patent Journal Sho 52-99236 proposed organic synthetic resins such as polyethylene resin, polypropylene resin, polyamide resin, acryl resin, vinylchloride resin, epoxy resin, polystyrol resin, etc. as the powder ingredients.

( Problems to be solved by the invention )

However, in case of using the conventional inorganic pigments for make-up cosmetics, the clarity of the color, coloring ability, transparency, etc. are not satisfactory. On the other hand, the said inorganic pigment powders are manufactured by pulverizing natural minerals generally. In this case, the shape of the particles becomes irregular. As a result, the smoothness and the extendability of the make-up cosmetics become inferior.

On the other hand, in case of adding organic synthetic resin powder to the cosmetic preparation, natural color and tone become poor.

Under the said circumstance, the present invention tentended to provide a make-up cosmetic having smooth and moistened touch, and providing a natural and healthy color tone.

( Methods and function of solving the problems )

The said purpose can be achieved by adding hardened powder product of organopolysiloxane to the cosmetic preparation.

The organopolysiloxane powder described in the present invention is the essential ingredient for the cosmetic preparation capable of generating smooth and moistened touch, and to provide a clear color phase/tone coloring ability, and transparency, which induce a healthy color tone to the cosmetic product.

The raw materials for manufacturing the said powder preparation of organopolysiloxane hardened product can be any kinds of organopolysiloxane compositions which can be hardened; and are organopolysiloxane elastoma composition which is hardened by the addition reaction under the presence of platinum type catalyst, organosiloxane elastoma composition which can be hardened by the condensation reaction ( the condensation reaction includes dehydration, dehydrogenation, dealcohol, deoxim, deamine, deamide, decarboxylic acid, deketone, reactions ), organosiloxane elastoma composition which can be hardened by organic peroxide under the presence of heat, organosiloxane elastoma composition which can be hardened by irradiation of gamma-ray, ultraviolet light or electron, or organopolysiloxane resin compositions which can be hardened by the reactions listed above.

Organic groups binding to silicon atoms of organopolysiloxane which is the major ingredient of the said hardened organopolysiloxane compositions are monovalent hydrocarbon groups; for example, these are methyl group, ethyl group, propyl group, butyl group, octyl group and other alkyl groups; alkenyl groups such as vinyl group, allyl group, propenyl group, etc.; substituted alkyl groups such as 2-phenylethyl group, 2-phenylpropyl group, 3,3,3-trifluoropropyl group, etc.; aryl groups such as phenyl group, tolyl group, xylyl group, etc.; substituted aryl groups such as phenylethyl group, etc.; monovalent hydrocarbon groups having epoxy group, amino group, hydroxy group, carboxyl group, carboxylic acid ester group, or mercapt group, and so on.

The said ingredient can be manufactured by the following methods; a method in which a thermally hardenable composition containing mainly the said organopolysiloxane is sprayed into hot air flow and hardened powder preparation is made; a method in which the composition which can be hardened by energy rays containing mainly the said organosiloxane is sprayed under the irradiation of high energy ray, and the hardened product is made; a method in which a thermally hardenable composition containing the said organosiloxane as the major ingredient or the composition hardened by the irradiation of energy rich ray are pulverized by the conventional methods such as ball mill method, atomizer method, etc., and so on.

The particle size of the pulverized material is preferably less than 500 microns, more preferably less than 100 microns, in order to obtain a make-up cosmetic preparation capable of showing a healthy color tone and providing sooth and moistened touch.

The concentration of the said ingredient is determined properly according to the purpose of the final products, and is not particularly specified. However, in case of using the said ingredient for manufacturing pressed make-up cosmetics, it is 1.0 - 50 weight %, preferably. On the other hand, in case of preparing a liquid make-up preparation, it is preferably 0.1 - 30 weight %.

The make-up cosmetics described in the present invention can be manufactured by the following method; in other words, powder form of organopolysiloxane hardened product, pigment powder and binding oil agent are combined and dispersed uniformly.

The pigment powders are body pigments such as talc, kaoline, calcium carbonate, magnesium carbonate, magnesium silicate, anhydrous silicic acid, etc.; white pigments such as titanium oxide, zinc oxide, etc.; inorganic color pigments such as red oxide, yellow iron oxide, chromium oxide, carbon black, ultramarine blue, etc.; organic color pigments such as tar pigments, red flower pigment, beta-carotene, cochineal, chlorophyll, etc.; fish scale preparation, bismuth oxychloride, titanium mica, mica and other pearl pigments, etc.; and so on.

The binding oil agents are liquid paraffin, squalane, vaseline, polyisobutylene, microwax, isopropylmyristate, myristyloctyldodecanol, di-(2-ethylhexyl) succinate, di-isooctanic acid neopentylglycol, monostearic acid glycerine, isostearic acid triglyceride, coconut oil fatty acid triglyceride, castor oil, ethanol, octyldodecanol, hexadecylalcohol, cetylalcohol, oleylalcohol, stearylalcohol, polyethyleneglycol, lauric acid, palmitic acid, oleic acid, stearic acid, iso-stearic acid, lanoline, beeswax, olive oil, etc. and other hydrocarbons, esters, glycerides, lower alcohols, higher alcohols, polyhydric alcohols, higher fatty acids, or organopolysiloxane liquid, and so on. Water, surfactants, viscosity resgulating agent, preservatives, perfumes, etc. can be added to the make-up cosmetics described in the present invention if necessary.

( Practical examples )

The present invention shall be explained in the following practical examples. In the practical examples, the parts means " weight parts ".

Practical example 1:

One hundred parts of both terminal dimethylvinylsilyl group blocked dimethylpolysiloxane having the general formula :  $\text{CH}_2=\text{CH}(\text{CH}_3)_2\text{SiO}((\text{CH}_2)_2\text{SiO})_{50-31}(\text{CH}_3)_2\text{CH}=\text{CH}_2$ , 3.5 parts of both terminal dimethylsilyl blocked methylhydrogen polysiloxane, 0.1 parts of 3-methyl-1-butene-3-ol and a suitable amount of platinum chloride isopropanol solution containing 10 ppm platinum metal per a total amount of organopolysiloxane, were mixed uniformly, and was hardened at 150° C for 2 hours. The organopolysiloxane elastoma hardened product was pulverized using an atomizer. The organopolysiloxane hardened powder product was analyzed using a scanning type electronmicroscope, and it was confirmed that the particle diameter was 1 - 50 microns.

Oil type eye liner consisting of the ingredients listed in Table 1 and

the said powder form of organopolysiloxane hardened product was prepared. The comparative sample containing no organopolysiloxane was also prepared in the same manner.

The actual application test was conducted on these experimental samples including the comparative sample by a panel consisting of 10 examiners. As a result, it was found that the compositions described in the present invention were superior to the comparative example; in other words, the color tone, clear eye line formation, moistened touch, smooth applicability, etc. of the practical examples were excellent.

#### Practical example 2:

Twenty parts of methyltrimethoxysilane, 50 parts of dimethyldimethoxysilane, 20 parts of trimethylmethoxy silane and 30 parts of tetraethyl silicate were added to 500 parts of aqueous solution of hydrochloric acid of pH 4.0, and the hydrolysis and condensation reactions were carried out for 5 hours. After drying by heating, organopolysiloxane resin hardened product was obtained. The said organopolysiloxane resin hardened product was pulverized using an atomizer. The analysis of the said powder form of organopolysiloxane hardened product was made using a scanning type electronmicroscope. As a result, it was confirmed that the particle size of the said product was 0.5 - 10 microns.

A foundation composition consisting of the ingredients shown in Table 2 and the said powder form of organopolysiloxane hardened product ( pressed product ) was prepared. Separately, a comparative composition containing no organopolysiloxane hardened product was prepared.

These samples including the comparative sample were tested by a panel consisting of 10 experts. As a result, it was found that the practical example prepared by the method described in the present invention was superior to the comparative sample. In other words, the practical example exhibited a fine healthy color tone, smooth application and moistened touch.

Table 1:

carnauba wax	5.3 parts
bee wax	9.0
microcrystalline wax	9.7
white vaseline	1.0
liquid paraffin	20.0
decamethylcyclopentasiloxane	18.0
both terminal trimethylsilyl group blocked dimethylpolysiloxane (viscosity: 2 centi- stroke at 25° C )	32.6
organic bentonite	0.5
titanium oxide	1.5
carbonblack	3.0
powder form of organopolysiloxane hardened product	5.0
preservative	Trace amount

Table 2:

titanium oxide	12.0 parts
zinc oxide	9.5
kaoline	35.0
talc	20.0
red oxide	0.8
yellow iron oxide	2.5
black iron oxide	0.2
liquid paraffin	4.0
octamethylcyclotetrasiloxane	5.0
both terminal trimethylsilyl group blocked dimethylpolysiloxane ( viscosity: 2 centi- stroke at 25° C )	5.0
isopropyl palmitate	3.0
glycerine	3.0
powder form of organopolysiloxane hardened product	7.0
preservative	trace amount
perfume	trace amount

( Effectiveness of the invention )

According to the present invention, as the make-up cosmetic preparation described in the present invention contained powder form of organopolysiloxane hardened product, the product could give smooth application, moistened feeling and fine color tone on the skin.